**U.S. FISH AND WILDLIFE SERVICE**
**SPECIES ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM**

SCIENTIFIC NAME: *Pyrgulopsis thompsoni*

COMMON NAME: Huachuca springsnail

LEAD REGION: Region 2

INFORMATION CURRENT AS OF: October 2005

STATUS/ACTION:

____ Species assessment - determined species did not meet the definition of endangered or threatened under the Act and, therefore, was not elevated to Candidate status
__ _ New candidate
_X_ Continuing candidate
___ Non-petitioned
_X__ Petitioned - Date petition received: May 11, 2004
__ 90-day positive - FR date:
__ 12-month warranted but precluded - FR date:
__ Did the petition requesting a reclassification of a listed species?

FOR PETITIONED CANDIDATE SPECIES:
a. Is listing warranted (if yes, see summary of threats below)? Yes
b. To date, has publication of a proposal to list been precluded by other higher priority listing actions? Yes
c. If the answer to a. and b. is "yes", provide an explanation of why the action is precluded.
We find that the immediate issuance of a proposed rule and timely promulgation of a final rule for this species has been, for the preceding 12 months, and continues to be, precluded by higher priority listing actions (including candidate species with lower LPNs). During the past 12 months, almost our entire national listing budget has been consumed by work on various listing actions to comply with court orders and court-approved settlement agreements; meeting statutory deadlines for petition findings or listing determinations; emergency listing evaluations and determinations; and essential litigation-related administrative and program management tasks. We will continue to monitor the status of this species as new information becomes available. This review will determine if a change in status is warranted, including the need to make prompt use of emergency listing procedures. For information on listing actions taken over the past 12 months, see the discussion of "Progress on Revising the Lists" in the current CNOR which can be viewed on our Internet website (http://endangered.fws.gov/).
___ Listing priority change
Former LP: ___

New LP: ___

Date when the species first became a Candidate (as currently defined): 1997

___ Candidate removal: Former LP: ___

___ A – Taxon is more abundant or widespread than previously believed or not subject to the degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status.

___U – Taxon not subject to the degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status due, in part or totally, to conservation efforts that remove or reduce the threats to the species.

___ F – Range is no longer a U.S. territory.

___ I – Insufficient information exists on biological vulnerability and threats to support listing.

___ M – Taxon mistakenly included in past notice of review.

___ N – Taxon does not meet the Act's definition of "species."

___ X – Taxon believed to be extinct.

ANIMAL/PLANT GROUP AND FAMILY: Snails, Hydrobiidae

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Arizona

CURRENT STATES/ COUNTIES/TERRITORIES/COUNTRIES OF OCCURRENCE: Arizona; Sonora, Mexico

LAND OWNERSHIP: Federal: 55%, private: 45%; Mexico: private: 100%.

LEAD REGION CONTACT: Susan Jacobsen, 505-248-6641

LEAD FIELD OFFICE CONTACT: Mike Martinez, Arizona Ecological Services Field Office, 602-242-0210 ext. 224

BIOLOGICAL INFORMATION: The species inhabits 13 springs and cienegas at 4,500 to 7,200 feet elevation in southeastern Arizona (11 sites) and adjacent portions of Sonora, Mexico (2 sites). This species was described by Taylor (1987). Habitats of the snail are typically marshy areas characterized by various aquatic and emergent plant species that occur within plains grassland, oak and pine-oak woodlands, and coniferous forest vegetation communities. The species is typically found in the shallower areas of springs or cienegas, often in rocky seeps at the spring source.

Populations of Huachuca springsnail exhibit significant genetic divergence particularly between populations on the east slope of the Huachuca Mountains and those at lower elevations along Sonoita Creek and the San Rafael Valley (Hurt, 2004). Hurt (2004) recommends focusing management efforts on maintaining genetic diversity.

THREATS

A. The present or threatened destruction, modification, or curtailment of its habitat or range. The historical distribution of the species is unknown, as it was first collected in 1969. However, loss of cienegas during the last century in southeastern Arizona is well-documented, and it is likely that the species occurred at many more than 13 localities in the past. Causes of cienega loss are debated, but probably include overgrazing, timber harvest, altered fire regimes, drought, and mining. After cienegas and watersheds were degraded by these activities, severe storms and periods of high precipitation caused erosion and sedimentation, accelerating loss of additional cienegas and riparian areas (Hendrickson and Minckley, 1984).

Many of the sites at which the springsnail occurs are developed springs where flows have been altered by dams, springboxes, and diversions. The effects of these alterations on the springsnail are difficult to assess because predevelopment conditions are unknown. Fuel loads are abnormally high in the Huachuca Mountains, where fire regimes have been altered from one of frequent ground fires to infrequent catastrophic crown fires. Loss of cover, and subsequent erosion and sedimentation following a catastrophic fire, could result in loss of habitat and extirpation of one or more of the seven populations in the Huachuca Mountains. Grazing can result in trampling and denuding of vegetation in the shallow waters of cienegas where the springsnail occurs, but grazing has been excluded from most springsnail localities. Development and associated groundwater pumping in the Sonoita Creek basin may threaten this population but further investigation is needed.

B. Overutilization for commercial, recreational, scientific, or educational purposes. Not a known threat.

C. Disease or predation. Not a known threat for the Huachuca springsnail, though other species are known to serve as the intermediate hosts for a variety of trematodes (parasitic flatworms) and as a prey item for non-native fish and crayfish.

D. The inadequacy of existing regulatory mechanisms. Existing regulatory mechanisms are not adequate to address threats such as fire and environmental catastrophe. The species is afforded some protection by occurring with or near other listed species (Huachuca water umbel, Sonora tiger salamander, Mexican spotted owl) at some localities.

The Huachuca springsnail is protected by the state of Arizona under Commission Order 42 which establishes a closed season for the species. This order prohibits direct take and collection of Huachuca springsnails but does not prevent habitat modification or destruction.

E. Other natural or manmade factors affecting its continued existence. All populations of Huachuca springsnail are limited to very small sites that are often many miles apart. Extirpation of a population could occur as a result of major storms, drought, fire, or other forms of environmental variability. Because populations are isolated, once extirpated, sites are unlikely to

be recolonized without active management. Small populations are also subject to genetic deterioration and demographic variability, which increases the likelihood of extinction.

CONSERVATION MEASURES PLANNED OR IMPLEMENTED: The Service began development of a conservation agreement with the federal landowner (Fort Huachuca) in 1995, but discussions were not fruitful. In addition, private landowners need to be included for a viable agreement that would protect the species. A prelisting notification letter was sent out to experts, interested persons, and potentially affected parties in November 1998. Fort Huachuca personnel are currently working to compile baseline information and assess the need for a candidate conservation agreement.

SUMMARY OF THREATS: Many of the sites at which the springsnail occurs are developed springs where flows have been altered by dams, springboxes, and diversions. Small populations are also subject to genetic deterioration and demographic variability, which increases the likelihood of extinction.

For species that are being removed from candidate status:
___Is the removal based in whole or in part on one or more individual conservation efforts that you determined met the standards in the Policy for Evaluation of Conservation Efforts When Making Listing Decisions (PECE)?

RECOMMENDED CONSERVATION MEASURES: Evaluate habitat needs and develop measures to protect springs.

LISTING PRIORITY

| THREAT | | | |
|---|---|---|---|
| Magnitude | Immediacy | Taxonomy | Priority |
| **High** | Imminent | Monotypic genus | 1 |
| | | Species | 2 |
| | | Subspecies/population | 3 |
| | **Non-imminent** | Monotypic genus | 4 |
| | | **Species** | **5*** |
| | | Subspecies/population | 6 |
| Moderate to Low | Imminent | Monotypic genus | 7 |
| | | Species | 8 |
| | | Subspecies/population | 9 |
| | Non-imminent | Monotypic genus | 10 |
| | | Species | 11 |
| | | Subspecies/population | 12 |

Rationale for listing priority number:

*Magnitude*: Most of the springs in which the species is found have been modified or subjected to some form of adverse management action. Habitats continue to be vulnerable to fire and grazing.

*Imminence*: We expect to continue to work with the state of Arizona and Department of Defense to develop a conservation agreement for the species. Therefore, we believe the potential for extinction is non-imminent.

_X_ Have you promptly reviewed all of the information received regarding the species for the purpose of determining whether emergency listing is needed? Yes.

Is Emergency Listing Warranted? No. The species does not appear to be appropriate for emergency listing at this time because the immediacy of the threats is not so great as to imperil a significant proportion of the taxon within the time frame of the routine listing process. Additionally, communication with personnel from Fort Huachuca indicates they are in the process of evaluating the status of species on Department of Defense lands and developing conservation strategies.

DESCRIPTION OF MONITORING: There are no ongoing monitoring efforts for the Huachuca springsnail. We have contacted personnel from Ft. Huachuca and expressed our interest in developing a conservation agreement for this species. The Arizona Game and Fish Department has also contacted Ft. Huachuca and expressed their interest in a conservation agreement.

COORDINATION WITH STATES

Indicate which State(s) (within the range of the species) provided information or comments on the species or latest species assessment: Arizona

Indicate which State(s) did not provide any information or comments: NA

LITERATURE CITED

Bequaert, J.C. and W.B. Miller. 1973. The mollusks of the arid southwest. The University of Arizona Press, Tucson, Arizona, pp 213-214.

Hershler R., and J.J. Landye, 1988. Arizona Hydrobiidae (Prosobranchia: Rissoacea). Smithsonian Contributions to Zoology. Number 459. 63 pp.

Hendrickson, D.A. and W.L. Minckley. 1984. Ciénegas-vanishing climax communities of the American Southwest. Desert Plants 6(3): 130-175

Hurt, C.R. 2004. Genetic divergence, population structure and historical demography of rare springsnails (*Pyrgulopsis*) in the lower Colorado River basin. Molecular Ecology.

Landye, J. Undated field notes. Huachuca springsnail populations located on the Fort Huachuca Army Post. Fish and Wildlife Service, Pinetop, Arizona.

APPROVAL/CONCURRENCE: Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes, including elevations or removals from candidate status and listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all resubmitted 12-month petition findings, additions or removal of species from candidate status, and listing priority changes.

Approve: /s/ Rich McDonald 11/17/2005
Acting Regional Director, Fish and Wildlife Service Date

Concur: August 23, 2006
Director, Fish and Wildlife Service Date

Do not concur: _____
Director, Fish and Wildlife Service Date

Date of annual review: October 2005
Conducted by: Mike Martinez